SECRET

DDI- 03513X-87

17 AUG 1987

MEMORANDUM FOR: Director of Training and Education

VIA: Deputy Director for Intelligence
Chief, OSWR Administrative Staff

25X1 FROM: [redacted]
Director of Scientific and Weapons Research, DI

SUBJECT: Approval for Full-time Training at George Mason
25X1 University [redacted]

25X1 1. [redacted] requests approval for full-time training with salary at George Mason University in Fairfax, Virginia. The training will
25X1 be in the field of computer science. [redacted]

25X1 2. [redacted] chose George Mason not only for its outstanding computer science program, but also because of its close location both to work and his home. He plans to take the following courses during the sixteen month program:

Computer Science

211 Computer Science II
212 Computer Science III
311 Assembly Language Programming
365 Computer Systems Architecture
455 Data Communications Systems
483 Data Structures and Analysis of Algorithms
528 Random Processes in Electrical and Computer Engineering

Mathematics

114 Analytic Geometry and Calculus II
213 Analytic Grometry and Calculus III
303 Matrix Algebra
305 Discrete Mathematical Structures
351 Probability
446 Numerical Analysis
540 Computer Engineering: Design Principles, Operating Systems, and System Development
541 Computer System Architecture

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[redacted]

25X1 **SUBJECT: Approval for Full-time Training at George Mason University**

25X1

4. The expenses for the training are expected to be as follows:

September - December 1987 (12 semester hours)

Tuition and Fees	$ 912.00
Books	150.00
Subtotal	$1062.00

January - May 1988 (12 semester hours)

Tuition and Fees	$ 912.00
Books	150.00
Subtotal	$1062.00

June - August (12 semester hours)

Tuition and Fees	$ 912.00
Books	150.00
Subtotal	$1062.00

25X1 **SUBJECT: Approval for Full-time Training at George Mason University** [redacted]

September - December 1988 (12 semester hours)		
Tuition and Fees		**$ 912.00**
Books		**150.00**
	Subtotal	**$1062.00**
Total		**$5284.00**

25X1 [redacted]

CONCUR:

25X1 [redacted]

for **Deputy Director for Intelligence** 18 AUG 1987 **Date**

APPROVED:

25X1 [redacted]

Director of Training and Education 2 SEP [illegible] **Date**

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Distribution:
Orig + 3 - Addressee
1 - DDI Chrono
1 - DI/STO
1 - OSWR Chrono
1 - CSS/Chrono
25X1 **1 -**

25X1 **OSWR/ES/CSS** **(13 August 1987)**

211 Computer Science II (3:3:0). *Prereq C or better in CS 111 or ENGR 110.* Basic data structures and algorithms incl arrays, structures, stacks, queues, lists, networks, trees, greedy algorithms, divide–and–conquer algorithms and sorting algorithms. A second high–level language is taught.

212 Computer Science III (3:3:0). *Prereq C or better in CS 211* Continuation of basic algorithms and data structures incl scheduling, packing, traveling salesperson problem, maximum flow, matrix operations and string processing algorithms. Intro to file organization, incl files, data bases, DBMS and report generation.

311 Assembly Language Programming (3:3:0). *Prereq C or better in CS 211.* Symbolic assembly language and computer structures: arithmetic and logical operations; machine representations of numbers, characters, and instructions; input–output and data conversions; addressing techniques; assembler directives; subroutine linkage; macroprocessing.

385 Computer Systems Architecture (3:3:0). *Prereq CS 311 and ENGR 301.* Computer hardware organization, software structure, and data organization. Students complete a term project involving simulating one computer system on another.

483 (465) Data Structures and Analysis of Algorithms (3:3:0). *Prereq CS 212, MATH 305.* Math necessary to properly analyze the computational effort of a given algorithm. Specific algorithms analyzed and improved.

455 Data Communications Systems (3:3:0). *Prereq CS 365.* Data base systems, data communication systems. Topics incl the role of exchanges, concentrators, multiplexors, buffering; network analysis, cost and design; software consideration.

528 Random Processes in Electrical and Computer Engineering (3:3:0). *Prereq ENGR 460, MATH 351, or equivalent.* Topics include random signals and noise in communications, stationary and ergodic random processes, spectral analysis, Gaussian processes, Brownian motions, mean square estimation, Kalman and adaptive filtering, Markov processes and Poisson processes. Applications are drawn from computer, communication, control, and signal processing.

114 Analytic Geometry and Calculus II (4:4:0). *Prereq C or better in MATH 113.* Transcendental functions, methods of integration, applications of the integral, analytic geometry.

213 Analytic Geometry and Calculus III (3:3:0). *Prereq MATH 114.* Infinite series, partial differentiation, multiple integrals, line and surface integrals.

303 Matrix Algebra (3:3:0). *Prereq MATH 114 or Pol.* Matrix operations, vector spaces, rank of a matrix, determinants, eigenvalues and eigenvectors.

305 Discrete Mathematical Structures (3:3:0). *Prereq MATH 114 or 116.* Survey of topics in discrete mathematical structures essential to the study of computer science. Topics incl a discussion of numeration schemes, lattices, Boolean algebra, graphs and directed graphs, combinatorics and elementary introduction to graphs and finite fields and finite–state machines.

351 Probability (3:3:0). *Prereq MATH 213 or 215.* Random variables, probability functions, special distributions, limit theorems.

446 Numerical Analysis I (3:3:0). *Prereq MATH 303 and a knowledge of a scientific programming language.* Significant figures, round–off errors, iterative methods of solution of nonlinear equations of a single variable, solutions of linear systems, iterative techniques in matrix algebra, interpolation and polynomial approximation.

540 Computer Engineering: Design Principles, Operating Systems, and System Development (3:3:0). *Prereq ENGR 441, 445, CS 311, or equiv.* A study of general design principles of computer systems, the operating system of various types of computers such as PDP–11, CDC Cyber, etc., selected topics of software engineering, the design of systems with specific applications, microprogramming and computer networks.

541 Computer System Architecture (3:3:0). *Prereq ENGR 540.* Theories of operating systems and evaluation and measurement of computer systems. Topics: controlled sharing, enforced separation, interrupts and context switching, virtual memory, virtual machines, measures and parameters of performance, bandwidth utilization, stochastic models, simulation models, evaluation of operations computer systems.